CLAIMS

What is claimed is:

1. A method of managing a shared object in an object-oriented environment, the method comprising the steps of:

generating only a single instance of said shared object in response to attempts by a plurality of clients to create an instance of a particular object belonging to a class to which said shared object belongs;

a first client of said plurality of clients invoking a first method of said shared object to register an observer object to notify about an event related to execution of a particular operation;

each client of said plurality of clients invoking a second method of said shared object to request execution of said particular operation; and

when the shared object performs the particular operation requested by the first client, sending a first message to each observer object that has been registered for the particular operation requested by said first client.

2. The method of Claim 1, wherein the steps further include sending a second message about another event related to execution of the particular operation requested by the first client to said observer object that was registered by said first client.

3. The method of Claim 2, wherein:

the step of each client of said plurality of clients invoking a second method includes said first client invoking said second method to request a first operation that includes a first subtask and a second subtask;

wherein the first message to the observer object registered by the first client is sent in response to completing execution of the first subtask; and

wherein the second message to the observer object registered by the second client is sent in response to completing execution of the first subtask.

4. The method of Claim 1, further including the step of a first client invoking another method of said shared object to register another observer object about another event related to execution of said first operation; and

wherein said other method is different than said first method.

5. The method of Claim 1, further including the step of said shared object creating, for each client of said plurality of clients, a client specific object that stores data associated with said each client.

6. The method of Claim 5, wherein the method further includes invoking a particular method of said client specific object created for said first client that returns information that may be used to access the observer object that was registered by said first client.

7. The method of Claim 5, wherein the steps further include:

said shared object invoking a method of said client specific object; and

in response to said shared object invoking the method of said client specific object, storing a reference value to the observer object for said first client.

8. The method of Claim 5, wherein the step of invoking the method of said client specific object is performed in response to the attempt by said first client to create an instance of a particular object belonging to a class to which said shared object belongs.

9. The method of claim 1, wherein the steps include:

for each client of said plurality of clients, performing the following steps when the shared object performs the particular operation requested by said first client:

identifying said each client;

determining whether said each client has registered an observer object about the event related to execution of the particular operation requested by said first client; and

if said each client has registered an observer object, then sending a first message to said observer object by invoking said second method of said observer object.

10. The method of Claim 1, wherein the step of sending a first message to each observer object that has been registered for the particular operation requested by said first client includes sending a first message to each client of said plurality of clients.

11. A method of managing a shared object in an object-oriented environment, the method comprising the steps of:

generating only a single instance of said shared object in response to attempts by a plurality of clients to create an instance of a particular object belonging to a class to which said shared object belongs;

a first client of said plurality of clients invoking a first method of said shared object to register an observer object to notify about an event related to execution of a particular operation;

each client of said plurality of clients invoking a second method of said shared object to request execution of said particular operation; and

for each client of said plurality of clients, when the shared object performs the particular operation requested by said each first client, sending a first message to each observer object that has been registered for the particular operation requested by said first client.

Sub A1

Add A2